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nately were cut down before they could be fully studied suggest its presence north of the city in the vicinity of Winnetka.

That it differs from the ordinary black oaks to the eye of other than botanical observers is evident from the fact that an intelligent farmer had separated it from its congeners, calling it "yellow oak," and remarking the tendency of the lower limbs to die. No chestnut oaks, to which this name commonly applies, grew there, so that it could in no way be confounded with this, even if the leaves were not so different. Looked at in the summer it gives the impression of great leafiness, the leaves being small as a whole, and of airiness on account of its glossy and finely divided leaves. In the winter it impresses by the glitter of its smooth bright branches when free from leaves, and by its great twiggyiness, due to the spray repeatedly and finely dividing, forming an irregular network as one looks through it.

As the form of the acorns first suggested specific difference, and on the whole is the most constant characteristic, the name *Quercus ellipsoidalis* seems most appropriate.—E. J. HILL, *Chicago, Ill.*

EXPLANATION OF PLATES II AND III.

PLATE II.—*Quercus ellipsoidalis* Hill.—*a*, Flowering branch, natural size; *b*, staminate flower, enlarged nine diameters; *c*, pistillate flower, enlarged nine diameters; *d*, leaf, natural size; *e*, *f*, acorns, natural size.

PLATE III.—*Quercus ellipsoidalis* Hill.—*a*, Fruiting branch, five sixths natural size; *b*, nut, natural size; *c*, vertical section of nut, natural size; *d*, seed, natural size; *e*, winter branchlet.

THE WYOMING SPECIES OF ANTENNARIA.

MOST valuable and efficient work has been done recently by Drs. Greene¹ and Rydberg² in the long neglected genus *Antennaria*. A critical examination of the material in the Herbarium of the University of Wyoming in the light of these contributions has led to the discovery of a few forms, hitherto undescribed, which seem worthy of specific rank. It has seemed well, also, to make mention of all Wyoming species of which specimens are at hand.

Antennaria reflexa, n. sp.—Low and cespitose, somewhat subligneous at base, with very short leafy offsets: stems 5–10^{cm} high: leaves

¹ Pittonia 3: 172, 273, 289.

² Bull. Torr. Bot. Club 24: 299.

spatulate-obovate or spatulate, obtuse to acutish, about 1^{cm} long, rarely more, densely tomentose on both sides; cauline leaves narrowly oblong, obtusish to acute: heads very small, about 4^{mm} high, sessile, 3 to 8 in a close glomerate cluster: involucre very woolly, in the pistillate heads campanulate-cylindrical; bracts of pistillate heads narrow, the inner acute, the scarious portion dark greenish-brown, the outer much shorter, broader, woolly to the tip or almost so; in the staminate heads the scarious portion also dark greenish-brown, oblong-obovate, very obtuse, spreading and becoming reflexed with age: papus of staminate heads clavellate.

This species differs from all other related forms in that the short outer bracts are woolly to the tip. From *A. umbrinella*, its nearest relative, it differs in its much darker bracts, and acute pistillate ones. It inhabits dry open hillsides at subalpine stations.

Type, no. 1265, in Herb. Univ. of Wyo., from Centennial valley, June 9, 1895; also no. 853, Union Pass, Wind River mountains, Aug. 11, 1894 (both by *Aven Nelson*).

Antennaria mucronata, n. sp.—Loosely cespitose: stems 5–12^{cm} high; stolons sparingly leafy, at most 4^{cm} long: leaves oblanceolate or narrowly spatulate, the mucronate tip usually hidden by the tomentum, 2^{cm} long, 3–5^{mm} broad, both faces densely woolly tomentose varying to sparse and hoary, only the lowest on the stolons becoming glabrate; these when glabrate equally so on both sides, with a prominent midrib beneath and an obvious mucronate tip; cauline leaves oblong-linear, acuminate: heads in a subcapitate cluster, sessile or pedicels very short, the lowest occasionally with a pedicel as long as the head: involucre woolly at base; bracts (pistillate) oblong-lanceolate, 5^{mm} long, the obtusish tips usually erose, the scarious portion dark greenish-brown or dark brown, rarely with a white tip.

A very distinct species, from the alpine summits of southeastern Wyoming. From *A. umbrinella* it differs in its longer oblanceolate leaves, its much darker greenish pistillate bracts, and its lighter tomentum. It is probably more nearly related to *A. media*, but its affinities with that species I have not been able to settle, there being no description of the latter.

Type, no. 5211, in Herb. Univ. of Wyo. from La Plata mines in the Medicine Bow mountains, Aug. 28, 1898; also by *Aven Nelson*, no. 4227, Battle Lake in the Sierra Madre mountains, Aug. 17, 1897.

ANTENNARIA UMBRINELLA Rydb., Bull. Torr. Bot. Club 24: 302.—This species is represented by only one specimen in this herbarium,

collected by Aven Nelson at the head of Green river, Aug. 14, 1894, no. 885. This is far from being typical. The leaves are narrowly oblanceolate, and the pistillate bracts are hardly obtuse. More material of this might prove it to be entirely distinct.

ANTENNARIA APRICA Greene, Pitt. 3: 274.—This excellent species is common in the foothills of the Laramie and Medicine Bow mountains, flowering early in the spring on sunny slopes. Many of our specimens have pinkish bracts (pistillate), and often as many as 14 heads in a cluster. The following are the specimens in the herbarium: no. 1269, Centennial valley, June 9, 1895; no. 149, Pole creek, June 3, 1894; Inyan Kara divide Aug. 29, 1892 (*B. C. Buffum*); no. 4347, Plumbago cañon, June 9, 1898.

Antennaria arida, n. sp.—Cespitose, in dense mats formed by the numerous short (1^{cm} high) ascending sterile branches: stems 10–15^{cm} high, slender, wiry, weak above, the subcapitate cluster frequently nodding, loosely covered with shreddy wool: leaves crowded, spatulate, acutish, 0.8–1^{cm} long, densely and permanently hoary tomentose on both sides, inclined to be conduplicate and noticeably so in the younger leaves; cauline leaves oblong linear, acute, lightly hoary-tomentose, more or less twisted and curved: heads 6^{mm} high, sessile, 6–10 in a subcapitate cluster: involucre turbinate; bracts (pistillate) in about two series, all obtuse, scarious portion oblong, milk-white, occasionally the outer with a purplish streak.

A remarkably distinct species, from the arid region of southwestern Wyoming. Type in Herb. Univ. of Wyo., no. 4798, collected by *Aven Nelson* at Tipton, June 17, 1898.

Antennaria scariosa, n. sp.—Cespitose, lightly hoary tomentose throughout: stems 3–6^{cm} high; stolons short, at most 4^{cm} long: leaves 1.4^{cm} long or less, spatulate, obtuse or acutish, inclined to be conduplicate; cauline leaves rather ample, oblanceolate varying to narrowly oblong, occasionally the lowest spatulate: heads 6^{mm} high, sessile, 6–8 in a subcapitate leafy-bracted cluster: bracts (pistillate) rather conspicuously scarious, all obtuse, the scarious portion milk-white elliptic to obovate.

In its floral character this is very closely allied to *A. arida*, differing only in its broader bracts. *A. scariosa* differs from that species, also, in its smaller size, its more prostrate habit, its larger radical leaves, and in its more ample cauline ones, which are never twisted. It also seems to be related to

A. recurva, as is evident from Dr. Greene's description of that species. It cannot be that species, however, for *A. scariosa* is distinctly cespitose, much resembling *A. aprica* in that respect, and its bracts (pistillate) are decidedly obtuse. Its leaves are also smaller and its stems taller.

Type in Herb. Univ. of Wyo., no. 4587, Leroy, Uinta co., June 7, 1898, by *Aven Nelson*.

ANTENNARIA ROSEA (Eat.) Greene, Pitt. 3:281.—Of this beautiful species there is but one specimen in this collection, secured by *Aven Nelson* at Dome lake, near the summit of the Big Horn mountains, July 16, 1896, no. 2904.

ANTENNARIA PARVIFOLIA Nutt., Trans. Phil. Soc. 7:408. *Antennaria microphylla* Rydb., Bull. Torr. Bot. Club. 24:303.—This is our commonest *Antennaria*, met with everywhere in meadows on the high elevated plains of Wyoming. Its distinctive characters have been already pointed out by Dr. Greene. However, from an examination of our rather numerous specimens of this species, the following characters are noticeable. The exceedingly small leaves are covered with a dense lustrous silvery tomentum, and the apices are triangular. The subtending bracts and the one or two uppermost cauline leaves are inclined to be glabrate, and somewhat viscid-glandular. The stems are usually covered with floccose wool. In none of our specimens is there any trace of a pinkish tinge in the pistillate bracts. A dwarf form (no. 3578) with very broad truncate-obtuse staminate bracts, from southwestern Wyoming, is probably very nearly typical. The following are the chief collections of this species: no. 762, Upper Wind river, August 10, 1894; no. 762, Dubois, August 10, 1894; no. 3514, Pine Bluffs, July 6, 1897; no. 3578, North Vermillion creek, July 17, 1897; no. 4846, Freezeout hills, July 10, 1898; no. 4933, Seminole mountains, July 21, 1898; also, by *Miss Clara Sanders* from Little Goose creek, Sheridan county.

Antennaria imbricata, n. sp.—Stems about 30^{cm} high, inclined to be wavy; stolons very short: leaves spatulate, mucronate, 1-nerved, 2^{cm} long, lightly tomentose on both sides; cauline leaves hoary pubescent, clasping, longer but not broader than those of the stolons, oblong-linear, the margins frequently undulately revolute, the lower slightly broadened upwards, somewhat obtusish and mucronate, the upper narrowed upwards and acute: heads large, about 7^{mm} high, in a close cluster; the pedicels very short, covered with yellowish wool as also

the base of the involucre: bracts (pistillate) imbricated, in about four series, pinkish, all more or less serrulate, the outer very broad and obtuse, the innermost narrow and acute.

It differs from *A. parvifolia* in its larger, less silvery leaves, and in its much broader pistillate bracts. From *A. foliacea* it is readily distinguished by its less ample cauline leaves, its much larger heads and its pluriserial bracts.

Type in Herb. Univ. of Wyo., no. 2036, collected in a meadow on North fork of Crow creek in the Laramie hills, July 11, 1896 (*Elias Nelson*).

Antennaria corymbosa, n. sp.—Stems erect, 25^{cm} high, with numerous ascending or assurgent sterile branches at base: leaves thin, sparsely tomentose, 1-nerved or indistinctly 3-nerved, narrowly oblanceolate, tapering gradually into a slender petiole, 3–3.5^{cm} long (including petiole); cauline leaves shorter, linear, acuminate: heads small, 4–5^{mm} high, in a rather close corymbose cyme, the lowest pedicel usually surpassing the others in length: involucre woolly with cobwebby hairs; bracts (pistillate) in about three series, oblanceolate, obtuse or the innermost acutish, a brown spot above the greenish portion, tips white.

A well marked species, evidently closely related to *A. pedicellata*, from which it differs in its obviously nerved and much less conspicuous leaves. Its woolly, cobwebby involucre and the brown middle portion of its bracts give a characteristic appearance.

Type in Herb. Univ. of Wyo., no. 4160, collected by *Aven Nelson* on a sunny slope at Battle lake in the Sierra Madre mountains, August 15, 1897.

ANTENNARIA RACEMOSA Hook, Fl. Bor. Am 1:330.—This well-known species was collected by *Aven Nelson* in 1894, Union pass, August 1, no. 812.

ANTENNARIA PULCHERRIMA (Hook.) Greene, Pitt. 3:176.—This is common at subalpine stations, growing in rich, loamy soil on wooded hillsides, no. 819, Union pass, August 12, 1894; no. 3225, Green top, June 28, 1897.—*ELIAS NELSON, University of Wyoming, Laramie.*

A NEW COLORADO ANTENNARIA.

THROUGH the kindness of Professor C. S. Crandall it has been possible to examine the specimens of *Antennaria* in the Herbarium of the Agricultural College of Colorado. This has brought to light a member of the *A. plantaginifolia* group which has not as yet been